



(12) **United States Patent**
Son et al.

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(54) **PIEZOELECTRIC ELEMENT AND
ELECTRONIC COMPONENT INCLUDING
THE SAME**

(58) **Field of Classification Search**
CPC H04R 17/00
(Continued)

(71) Applicant: **MPLUS CO., LTD.**, Suwon-si,
Gyeonggi-do (KR)

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Primary Examiner — Thomas Dougherty

(74) *Attorney, Agent, or Firm* — LRK Patent Law Firm

(57) **ABSTRACT**

A piezoelectric element includes an element layer, an electrode layer including one or more positive electrode layers and one or more negative electrode layers repeatedly stacked to alternate with each other on the element layers in a vertical direction, a primary positive electrode connection member connecting the positive electrode layers, a primary negative electrode connection member connecting the negative electrode layers, at least one secondary positive electrode connection member, at least one secondary negative electrode connection member, and a primary electrode connected to the primary positive electrode connection member and the primary negative electrode connection member and configured of a pair of electrodes, and at least one secondary electrode spaced apart from the primary electrode and configured of a pair of electrodes.

5 Claims, 8 Drawing Sheets

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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